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|---|---------------------------------------|------------------|
|  | INSTRUCTIONS NOTE | Page 1 out of 30 |
| | <i>Retarder Prover Cabinet</i> | |
| | <i>reference AR46;88-NI-EN-2006-1</i> | |

| Updated | Date | Nature of the evolution |
|---------|------------|---|
| 1 | 29/04/2014 | New interface keyboard of command BI TRONIC 2 |
| | | |
| | | |



AR46 to AR88
AR46D2E to AR68D2E
AR46VISIO
HG46 to HG88
AR2-46 to AR3-68
HG2-46 to HG3-68
ARP88

| Attached document | To preserve by the user | To preserve by the fitter |
|--|-------------------------|---------------------------|
| Electric diagrams+ technician parameters | X | |

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Note to be preserved by the user

The Hengel machines are particularly simple to go up. However, it is imperative of reading this instructions note attentively.

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1 Presentation

1.1 General presentation

Company HENGEL thanks you for your confidence.

Machines HENGEL are the fruit of a long experiment in the field of deep freezing, the storage and the fermentation of products of bakery and pastry making.

It allowed HENGEL to know all specificities of the profession and to offer a multitude of machines guaranteeing a very great quality of deep freezing, storage, and a great control of the process of fermentation but also an irreproachable quality of materiel, perfectly adapted to the constraints of the profession.

This instructions note will enable you to understand, to install and to use under the best conditions the machine than you have just acquired.

1.2 Technical description

1.2.1 The bi-tronic Control regulation

The requirements of the professionals pushed us to develop a new generation of regulators for the fermentation chambers because the conventional regulations do not meet the need for the professional baker any more.

The regulation " Bi-tronic Control " is an element determining for the control of the process of fermentation. It offers unequalled possibilities which allow a personalization of fermentation and an adaptation to the requirements of each baker, while preserving a very great ease of use.

This regulator places at your disposal a pallet of functionalities reliable and conceived to facilitate the task with the daily newspaper to you

ERGONOMICS

- keyboard of control to height of the eyes
- message in light
- easy cleaning

SIMPLICITY

- simple and intuitive use
- permanent posting:
 - cycle in progress
 - instructions in progress
 - temperature interns

FUNCTIONALITY

- push slow with control of the hygrometry
- push traditional with 3 possibility of gone up in temperature:
 - standard
 - by stage (in 5 phases maximum)
 - linear, control of the rise in temperature of minute in minute
- stoving
- return in automatic cold at the end of the phase of fermentation
- resumption of the cycle in the event of interruption of current with warning message
- indication in light of the incidents and audible alarm



2 Significant Instructions

2.1 General instructions of installation and operation

Although machines HENGEL are particularly simple to go up and use, it is obligatory of reading its instructions attentively in order to guarantee the quality of operation and the perennality of the machine.

Machines HENGEL are designed to function under conditions of temperatures, hygrometry and use which it is advisable to respect for an ideal efficiency.

The pieces of furniture are designed to function in a nominal environment from 32°C and 70% of hygrometry. Beyond that, the performances of the machine can fall.

The refrigerating unit is designed to function at a maximum ambient temperature of 43°C. Beyond that, the risks of break-in of the compressor are very significant.

Moreover, more the ambient temperature is low and:

- more electric consumption is low
- more the refrigerating power is significant
- more the lifespan of the compressor is long
- better are the performances

In all the case, it is appropriate that the group is installed in a very ventilated place, far from heat sources and for the shelter of the sun and the rain.

In the event of remote group, the length of refrigerating pipings will not have to exceed 15m. Beyond that, contacting HENGEL.

Optimal limits of operation:

- **Deep freezing: -35°C**
- **Storage: -20°C/-25°C**

Made regulate your temperature of storage to -25°C does not improve the storage but generates an higher consumption.

Ensure the correct operation of the machine, one should not in no case to store products directly on the ground because it prevents the circulation of air and thus the homogeneity of the temperature at the interior of the box.

The machine will have to be installed on a flat ground and of level.

The electric food and connections will have to be in conformity with the local standards into force.

It is necessary to envisage spaces for the opening of the doors and maintenance

2.2 Principal characteristic of water for the system of hygrometry

| | |
|------------------------------------|--|
| Solid particles: | Water should not contain particles whose diameter is higher than 10 micron |
| Conductivity | Conductivity must be lower than 1500 µS/cm |
| Complete alcalimetric title | The alcalimetric title should not be lower 50 °F (F rench degree). |
| Chlorine | The rate of Chlorine must be lower than 300 mg/l |
| Acidity of water | The pH must lie between 6.5 and 9 |
| Hardness | The water hardness must be lower than 200 mg/l |



Within the framework of the new standards concerning the cold stores, the leak detection must obligatorily be carried out each year by qualified personnel.

2.3 Instructions of transport

All the elements of the machines are protected by packing.

This packing should not be exposed to the bad weather. Prevent that they are subjected to significant jumps of temperatures.

The loading and the unloading of the freight vehicle can be carried out by means of a fork-lift truck.

The payload of the lifting truck must be appropriate for the weight of packing .

During transport and handling, take all the essential precautions not to damage the various elements of the machine contained in packing.

2.4 Instructions of demolition

For the demolition of the machines, **it is essential to be addressed to a specialized company for the waste disposal**. It will carry out the disassembling of the machine by separating the elements and will take care of recycling or storage to the discharge.

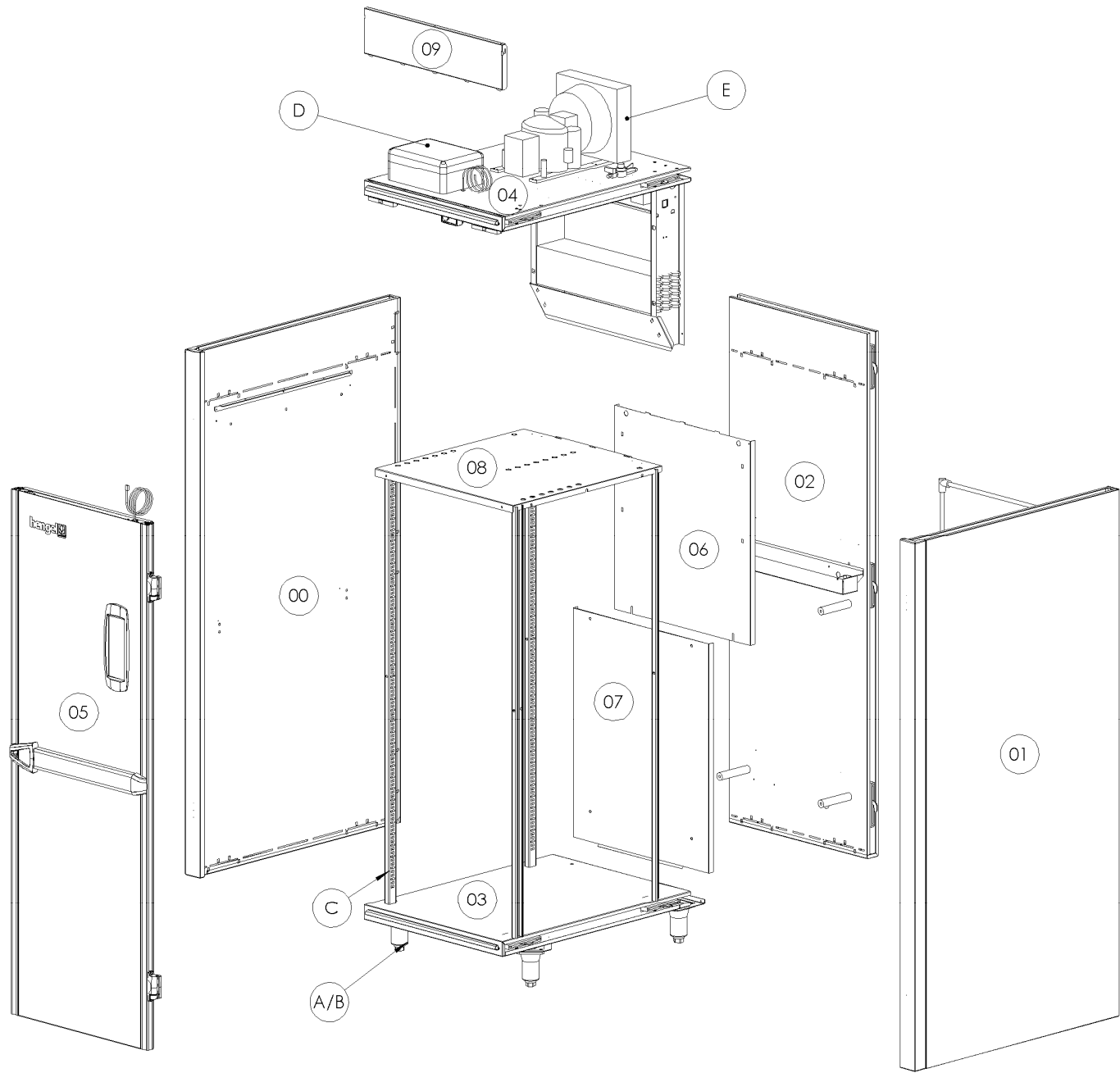


Any instructions not respected will be able to generate a faulty operation of the machines. The operations of installation, cleaning and maintenance must imperatively be carried out by personnel qualified while following the instructions given by the means of this note.

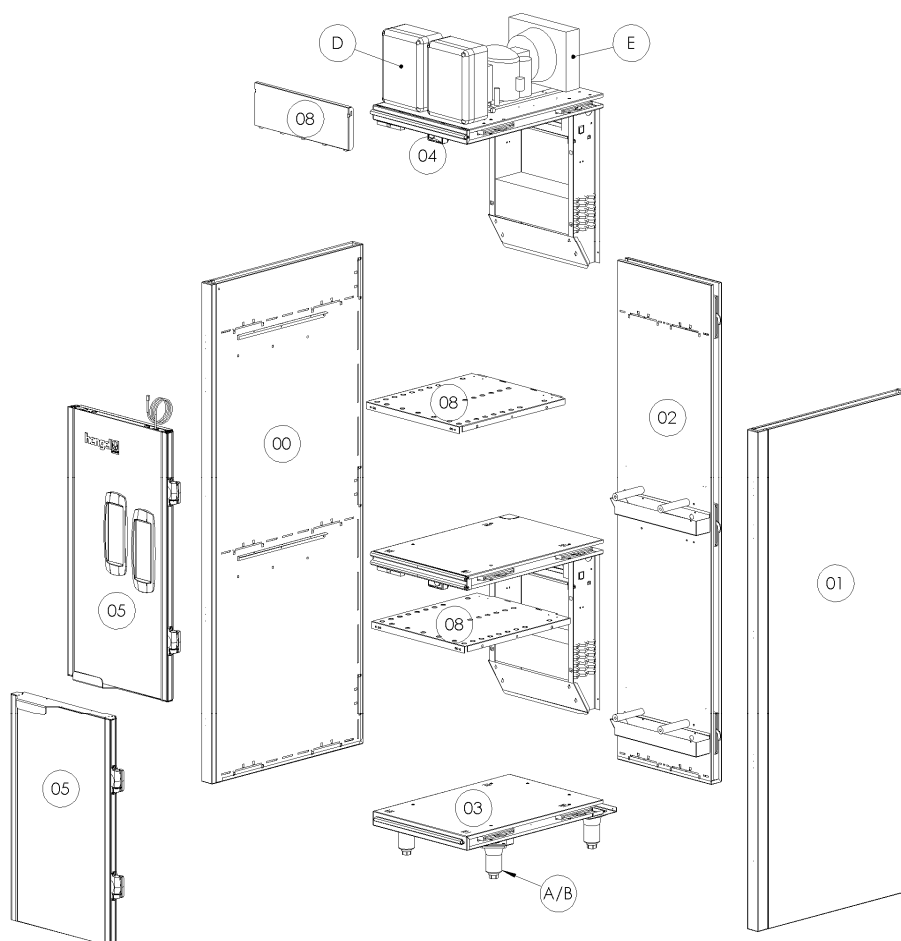
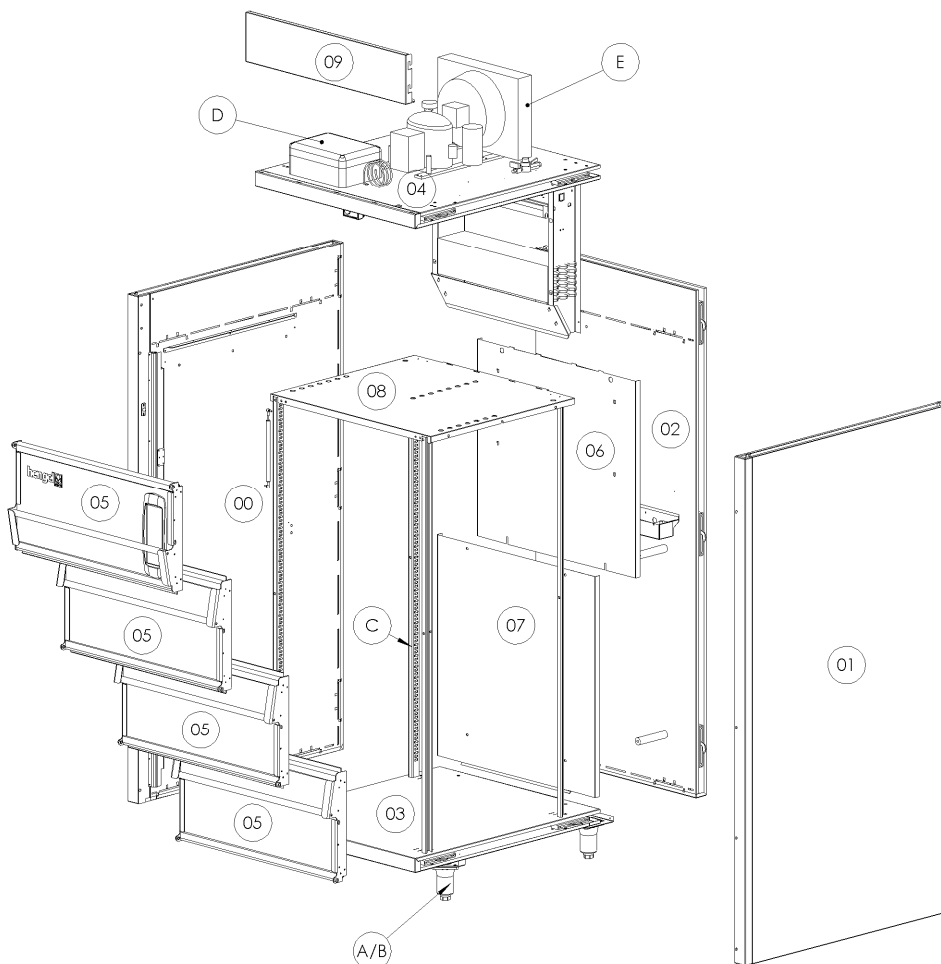
3 Instructions of installation

3.1 Exploded view

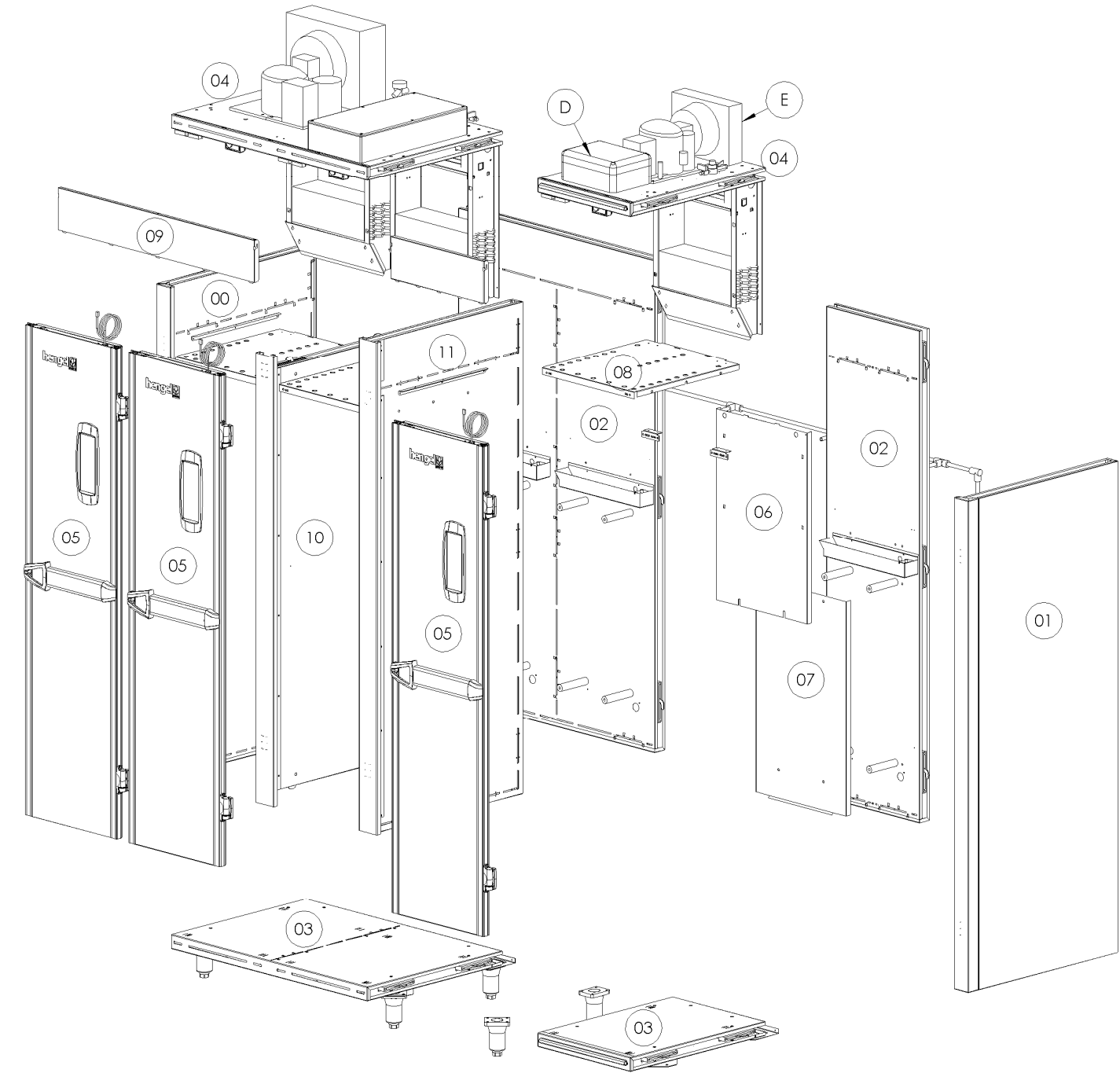
3.1.1 AR46 to AR88



| | | | | | |
|----|------------------|----|-----------------|-----|----------------|
| 00 | Left side panel | 06 | High separation | A/B | Feet or wheels |
| 01 | Right side panel | 07 | Low separation | C | Ladders |
| 02 | Fund panel | 08 | Air separation | D | Electric box |
| 03 | Ground | 09 | Cover plate | E | Cooling unit |
| 04 | Platform | | | | |
| 05 | Door | | | | |

3.1.2 AR46D2E à AR68D2E + AR46VISIO**3.1.3 ARP88**

3.1.4 AR2-46 to AR3-68



| | | | | | |
|----|------------------|----|------------------|-----|----------------|
| 00 | Left side panel | 06 | High separation | A/B | Feet or wheels |
| 01 | Right side panel | 07 | Low separation | C | Ladders |
| 02 | Fund panel | 08 | Air separation | D | Electric box |
| 03 | Ground | 09 | Cover plate | E | Cooling unit |
| 04 | Platform | 10 | Interim panel | | |
| 05 | Door | 11 | Separation panel | | |

3.2 Assembly of the case

3.2.1 Pose of ground (only for the type AR)



This operation relate to only the models AR

The grounds are equipped with feet out of standard but such equipped with caster in option.
After the installation of the feet, put silicone on the sides of the ground



3.2.2 Pose of fund panel



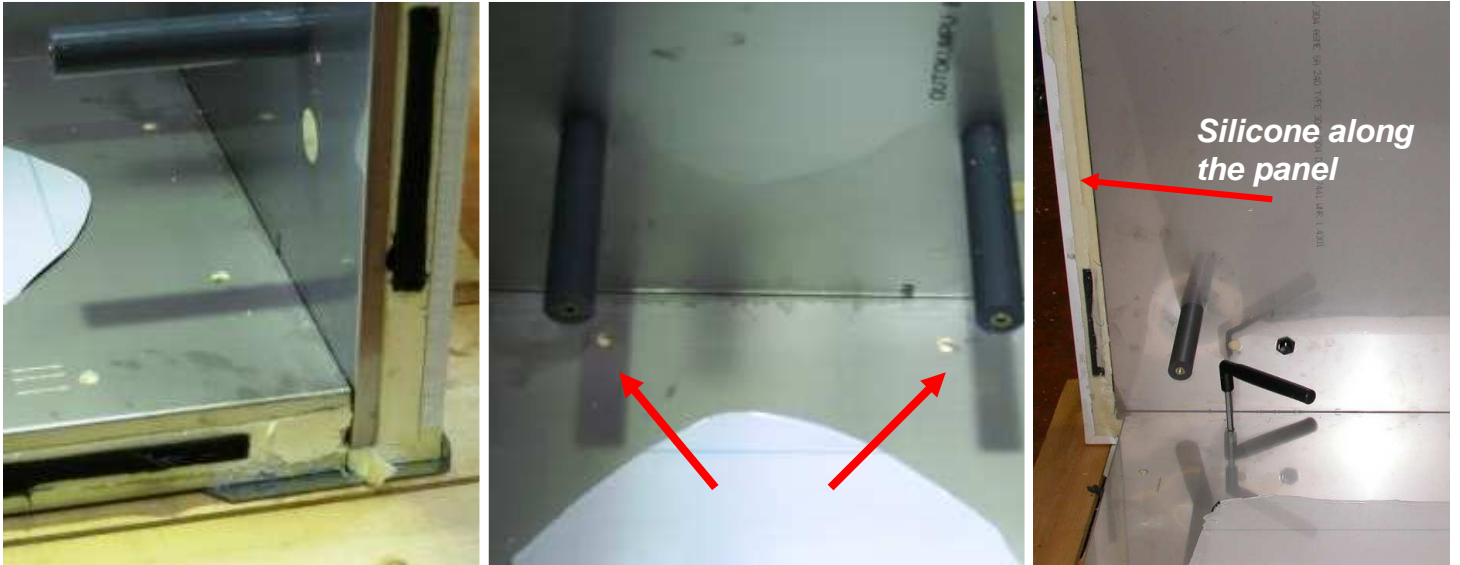
For installing the panels it is necessary **to remove plastic film of protection** like photography below. Because when the film is removed after assembly of the panels it is usually cut with a cutter and there is very great risk of damage of the layer of protection of the panels.



- Case of a model of the type AR:

It is necessary to start with the bottom then continue by the angles.

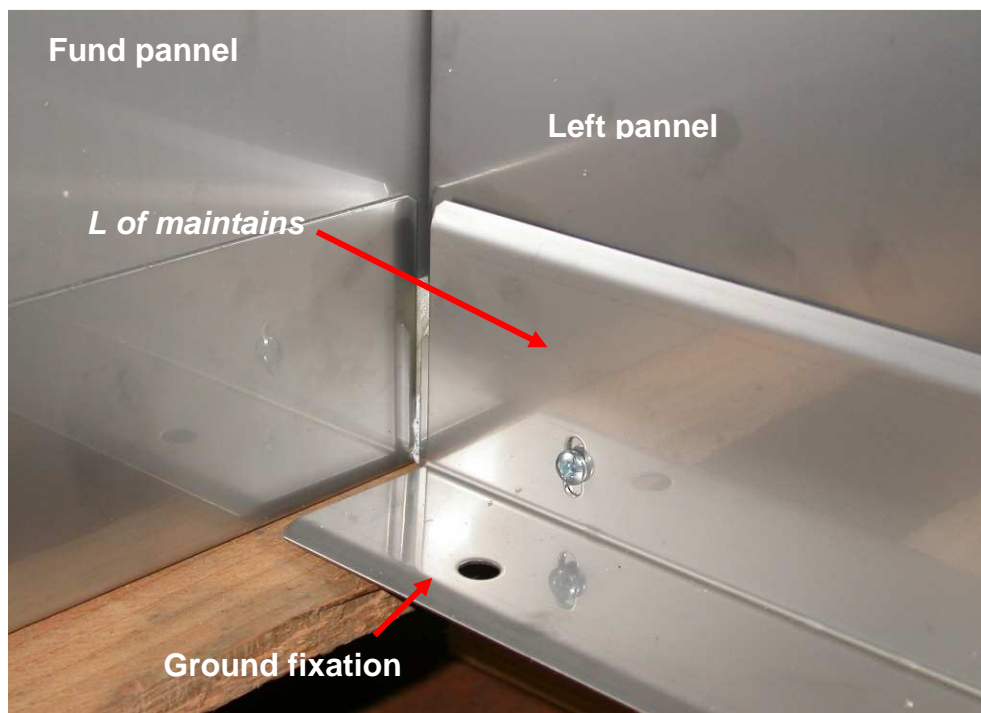
To install a panel it is necessary to vertically position it against the ground and lock the panel at the 2 places indicated by the arrows using the key for provided hook.



Once the locking carried out, put silicone on the moulding of the vertical basic panel.

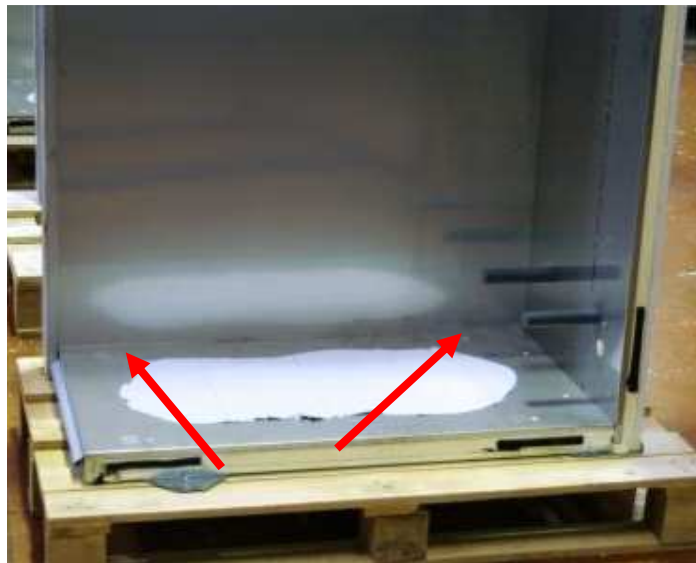
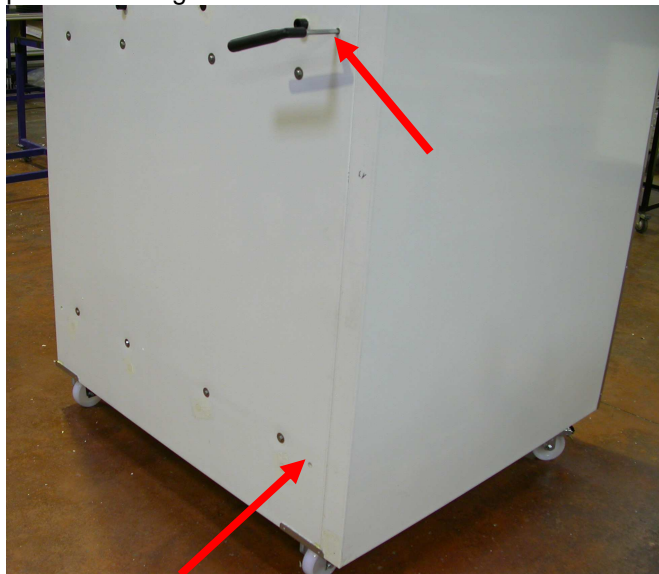
-Case of a model of the type HG :

To install the basic panel, it is necessary to vertically position it with the panel of left which has a L of maintains, then lock the panels at 3 places on the height of the basic panel, which will make it possible to maintain the unit.



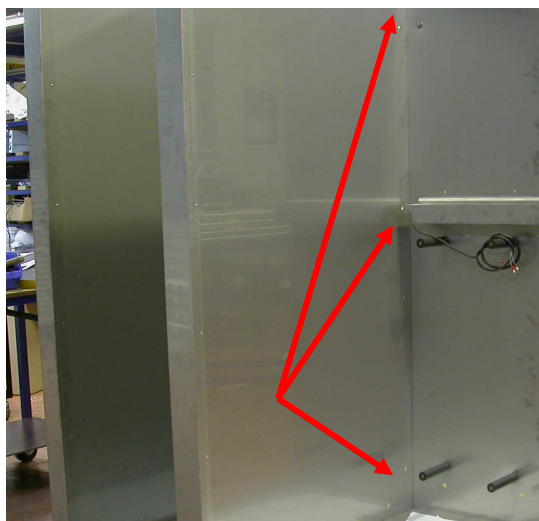
3.2.3 Pose of the panel on a left side

Place the panel on the left side in butted against the basic panel then lock the panel at 3 places on the height and 2 places on the ground.



3.2.4 Pose of separation panel (only for the type AR2/AR3/HG2/HG3)

Position the panel of separation and lock at 3 places indicated with the photography. *(for the models AR, you can make use of pawn centring device).*



NB : For the assembly of the cabinet to more than 2 compartments joined, as many renew the stage of **Pose of separation pannel** time as one needs it to the last side panel.

3.2.5 Pose of the panel on the right side

Proceed in the same way that for the panel on the left side

Once that all the panels are locked, carry out joints with silicone on the ground to guarantee the sealing of the machine and check the assembly of the case like below.



3.2.6 Pose of the separation of compartment (only for the type AR46D2E/AR48D2E/AR68D2E)

Pose the panel of separation using the slides and fix it using a screw driver.

Then, pose silicone joints of each with dimensions of separation in order to maintain the insulation enters the 2 compartments.



3.2.7 Pose of the platform

Install the platform by locking the hooks on the bottom.

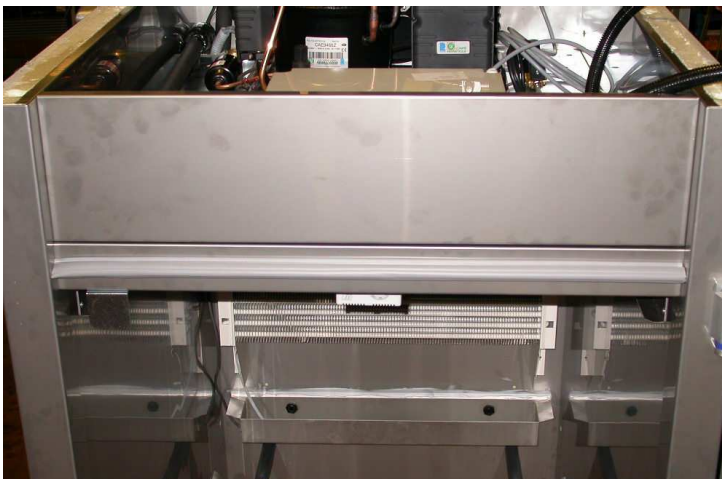
Once the locking carried out, pose silicone joints in order to guarantee the sealing enters the platform and the interior of the machine.

Then fix the reinforcement for the feet (model of the type AR).



3.2.8 Pose cap in top of door

Lock the cap in top of door using the hooks which is in top of the side panels.



3.2.9 Pose evaporator and deflector

Before posing the evaporator, you must stop the holes not used with stoppers provided and a not deteriorated mallet in order to let us pannels.(stopper them gray for the interior and white for the exterior).

It is absolutely necessary to carry out this operation before the installation of the evaporator.

Then carried out the installation of the silicone joints on the ground in order to guarantee the sealing of the machine.



In order to fix the evaporator, use a screw driver and screw each side of the evaporator. Then make it pass the cable of the resistance of vat along the evaporator.



Then fix the air deflector



3.2.10 Pose plates of separation

Fix sheets of separation of air using a screw driver.



3.2.11 Pose ladders and slides (only for the type AR)



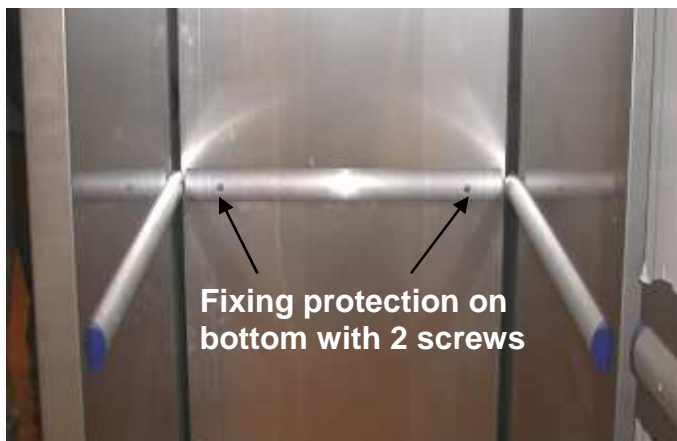
This operation relate to only the models AR



3.2.12 Assembly of protections (only for thr typr HG)

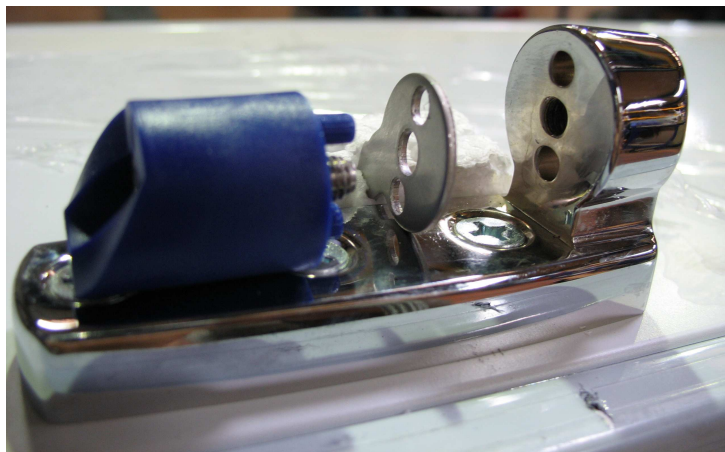


This operation relate to only the models HG

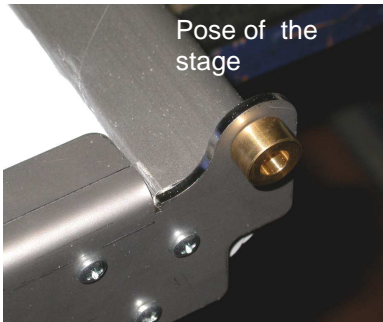


3.2.13 Pose of the doors

Install the door-fittings like below and install the door.

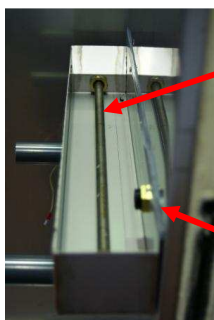


3.2.14 Pose of wickets (only for the ARP88)

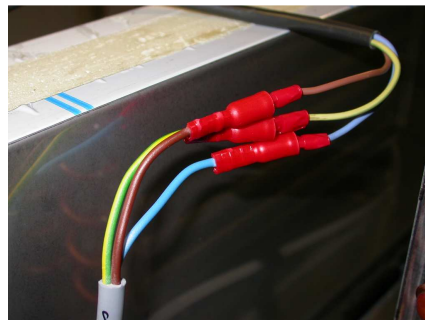


3.3 Electric connections

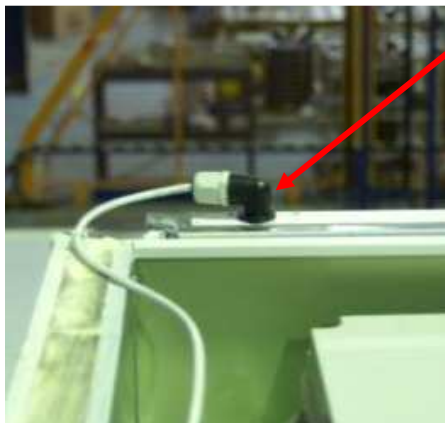
3.3.1 Connection of the resistance of hygrometry



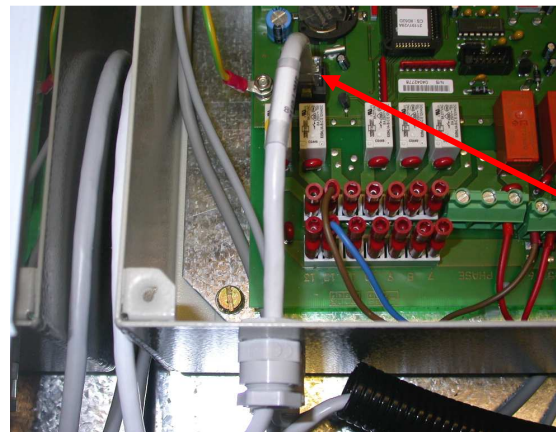
Too full connection



3.3.2 Connection keyboard of regulation

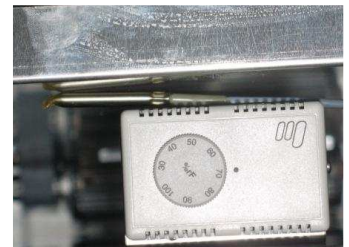


BUS cord leaving the top of the door



3.3.3 Connection hygrometrical probes and temperature sensor

Check the positioning and the connection of the probe of hygrometry under the platform with the temperature sensor as on photography.



No the hygrometry on size 46.

3.4 Refrigerating connections (remote group)



Refrigerating connections require a knowledge to make and must imperatively be carried out by **qualified personnel**.



The refrigerating unit must be installed outside or in a ventilated room. The ambient temperature should not exceed 35°C. Control only no obstacle doesn't obstruct the circulation of air on the condenser.

- Carry out that the setting with the vacuum during 3 H of with dimensions the aspiration and repression using a vacuum pump.
- Carry out a preload in refrigerant R404 to put in pressure the installation.
- Carry out a leak detection of the installation with an electronic detector.
- Adjust the pressure controller



CAUTION: In the case of an installation with remote group, the length of refrigerating pipings will not have to exceed 15m

-Inspection of the refrigerating circuit

Within the framework of the legislation concerning the protection of the layer of ozone, it is necessary to check each year the air tight of the refrigerating circuits and thus carry out a leak detection.

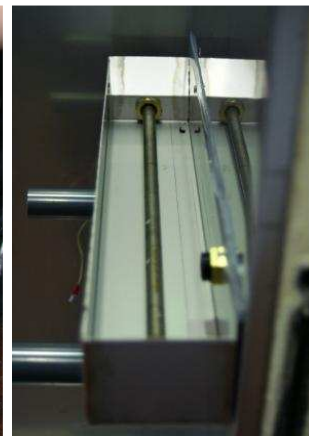
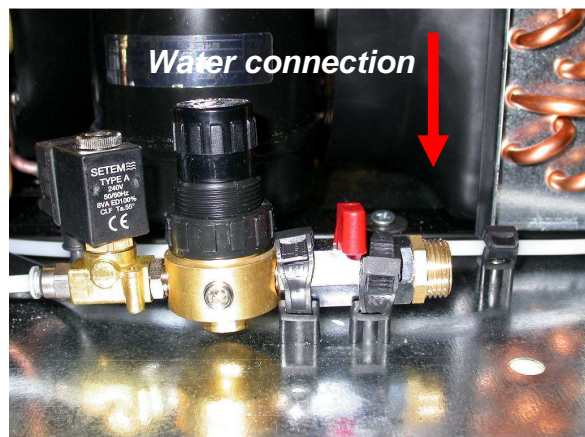
This operation must be carried out by a qualified personnel.

It is imperatively necessary to refer to the legislations in force.

3.5 Water connection

Water connection is carried out on the platform near the condenser.

Make pass the white pipe of arrived of water in the vat by making it pass along the evaporator as the electric cable of resistance.



Attention, the flow of water is regulated in drop by drop

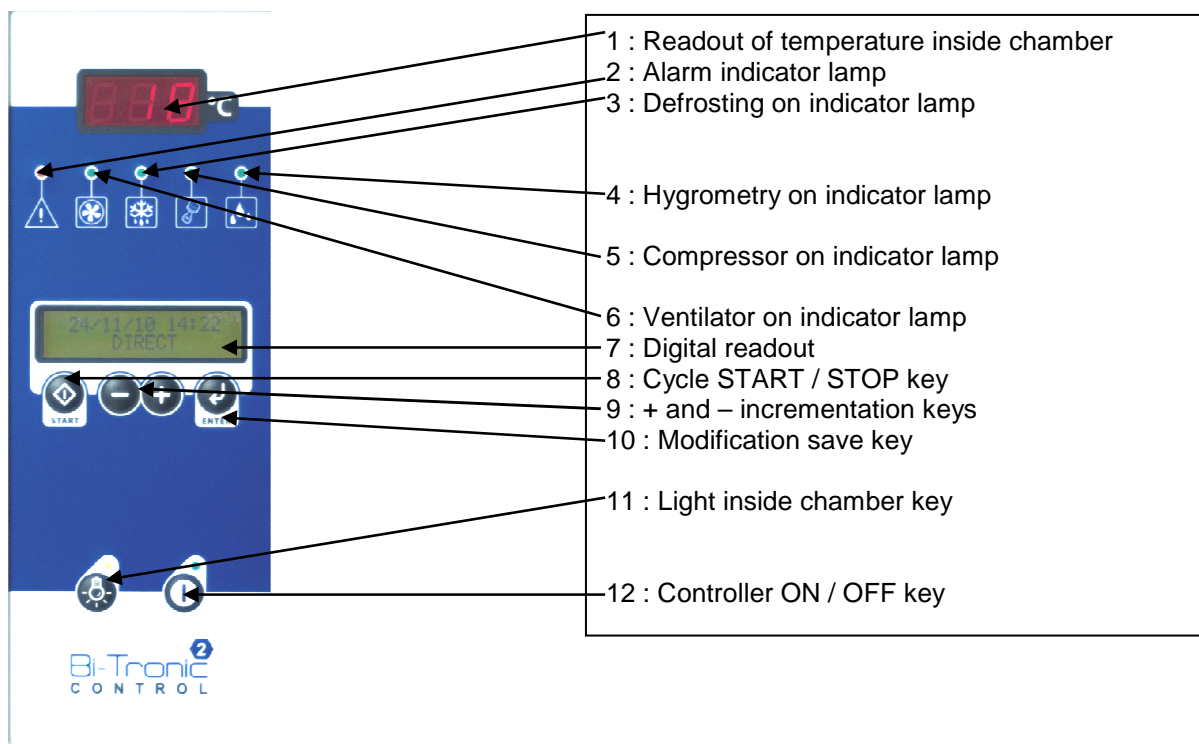
3.6 Step of first startup

3.6.1 Instructions of first startup

- Check the electric power supply of the unit, namely the voltages (230V and 380V).
- Check that the valves of the refrigeration circuit are open.
- Check the gas tight of the refrigeration circuit
- Switch on the unit.
- Refer to the user manual of the controller to start up a « DIRECT » cycle
- Set a high set temperature value (+10°C with respect to the t° of the chamber) and check the hot operation.
- Set a high set hygrometry value (98%) to check the spray by the hygrometry nozzle.
- Check the water-proof of the run-off circuit.
- Set a very low set point to check for the correct operation of the compressor. Warning : the compressor has an anti-short cycle of 2 min. When the compressor starts, it runs for a minimum of 2 min. When it stops, it stops for a minimum of 2 minutes unless the machine is stopped completely.
- The machine is then ready to operate.

3.6.2 Presentation interfaces regulating Bi-tronic Control

User interface :



ATTENTION This key (12) energizes only the regulator. To in no case it does not put not under tension the machine. For that it is imperatively necessary to cut the disconnecting switch located on the principal case.

3.6.3 Technician parameters Bi-tronic Control regulation

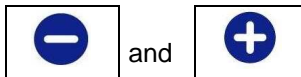
- Access to the technician parameters

To reach the parameters technician, it is necessary to proceed in the following way:

It is necessary to position on the starting posting:

17/06/02 14 : 37
MANUEL

Press then simultaneously on the keys



Until appearance of posting:

Technician's
settings

Validate while pressing on the key,



Posting becomes:

| |
|----------------------------------|
| Tech. Settings Tech Code? 000 |
|----------------------------------|

The technician code is " 123 "

The first " 0 " flickers. Use the key



to write the first number « 1 »

Validate while pressing on the key,



It is then the second figure which flickers, then proceed in the same manner to finish the code.

Posting becomes:

| |
|--------------------|
| Language French |
|--------------------|

It is then possible to change the language:



or



Validate while pressing on the key,



All the other parameters can be modified by same manner.

To leave the technician parameters, it is necessary to make ravel all the parameters until appearance of

| | | |
|---------------------------------|--|--|
| Tech.Settings Tech Code? 000 | | |
| | | |

Three times should then be validated:

- List of the technicians parameters



The list of the technician parameters is with the electric diagrams.

4 Use of the machine

4.1 Use of bi-tronic Control regulation

Very simplified use. It is based on two types of programming :

-DIRECT

This is the mode used for direct operation :

-start-up

adjustment of set temperature value if it is to be been modified since the last use

-if the machine is equipped with the electronic hygrometry probe option, adjustment of the hygrometry set value if it has to be modified since the last use.

-PRE-PROGRAMMING

The « Bi-tronic Control » offers the possibility of pre-programming four different fermentation cycles corresponding to different productions and to store them, even in the event of a prolonged power failure.

These programs can be called up very easily according to the type production thereby giving rise to very simplified use and optimum fermentation precision.

When a program is called up, all the settings of the last use are kept including the time of the end of fermentation cycle. Only the day of the end of fermentation is modified as the controller always proposes the following day. For example, if it is Tuesday, the controller proposes Wednesday. However, this day can be very easily modified if required.

4.1.1 First-time start up / Setting of clock

After installing the unit, the first operation consists of setting the clock. This operation is required for the operation of the regulation

On first-time start-up of the unit the following message appears :

| |
|------------------|
| COMPLETE STOP |
|------------------|

This message means that the unit is on and ready to operate

To do this, activate the key :



The readout comes on and indicates :

| | |
|----------|--------|
| 17/06/02 | 14 :37 |
| DIRECT | |

-If the date and time indicated are incorrect,

press the following key several times :



until the following appears :

| |
|----------------------|
| Clock programming |
|----------------------|

Then press



-The year flashes

update it by pressing



-If the correct date has been passed accidentally

continue to press the key,



-When the year is correct,

press



Then the month flashes. Proceed in the same way as for the year and so on until all the dates and times are correct.

Press once again on



to go back to the readout

| |
|----------------------|
| Clock programming |
|----------------------|

To go back to the original screen :



The readout then becomes :

| | |
|----------|-------|
| 17/06/02 | 14H37 |
| DIRECT | |

4.1.2 DIRECT operating mode

The DIRECT operating mode is designed to work in manual mode. As soon as the dough has gone into the chamber, the cycle is started. This is a simplified cycle as the temperature and hygrometry set values will not change unless the cycle is stopped manually. It is, however, possible to change these set values at any time by intervening manually.

Operation :

When the time and date have been recorded, the readout displays :

| |
|---------------|
| COMPLETE STOP |
|---------------|

This message means that the unit is on and ready to operate.

To do this, activate the key :



The readout comes on and indicates :

| | |
|----------|-------|
| 17/06/02 | 14H37 |
| DIRECT | |

To start the cycle, press



The cycle is started and the readout shows

| | |
|--------|-----|
| DIRECT | |
| +13°C | 78% |

This means that you are in the DIRECT cycle, the set temperature value is 13°C and the set humidity rate is 78% and these two set points will be operational unless the cycle is stopped.

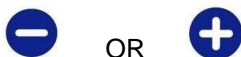
If you wish to change one or both set points,

Press :



The temperature flashes

To change it, press :



If the temperature is not to be changed, go to the next step

Confirm by pressing :



Then the hygrometry percentage. Follow the same procedure as for the temperature.

It is to be pointed out that :

- during these operations the machine continues to operate,
- the new set points are taken into consideration when they are recorded (they no longer flash).

To stop the cycle, press :



The machine can then be stopped.

Press



The screen goes out and readout becomes:

COMPLETE STOP

4.1.3 Pre-programmed fermentation cycles

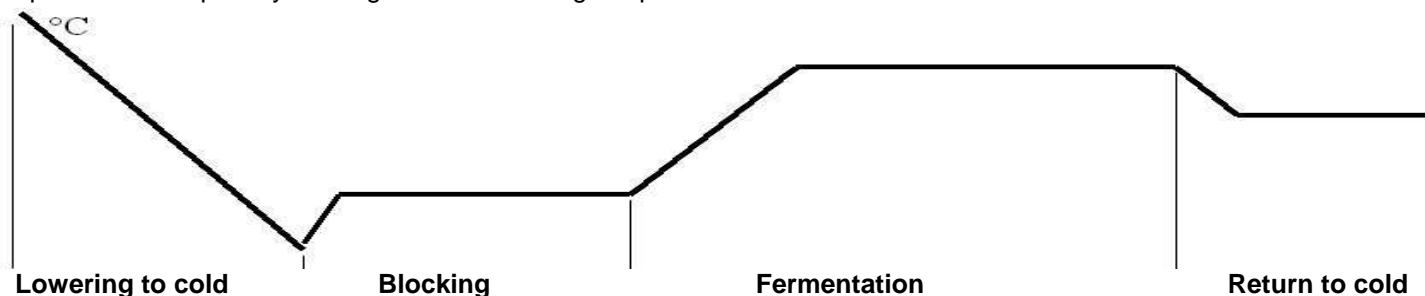
The controller is designed to save 4 fermentation cycles corresponding to different productions, thereby avoiding having to reset the controller every time a production is changed to prevent wasting time and any risks of errors

This pre-programming namely allows for the setting of the different times, the different temperatures, the different hygrometry rates and a personalised temperature build-up for each type of production.

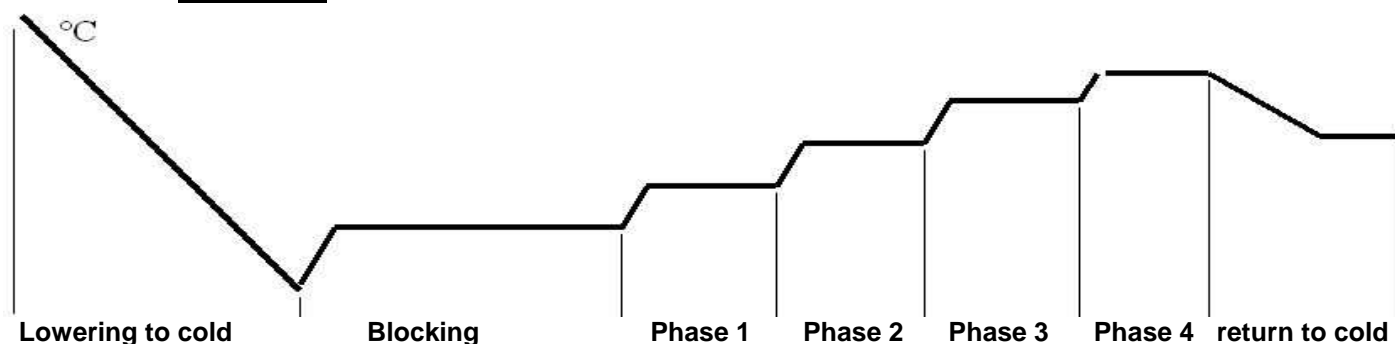
The controller authorises three temperature build-up modes which can each be allocated to a pre-programmed fermentation cycle.

1 STANDARD

This mode is the usual temperature build-up mode. The temperature build-up time is not controlled, the build-up speed depends on the quantity of dough and the starting temperature



2-STEPPED

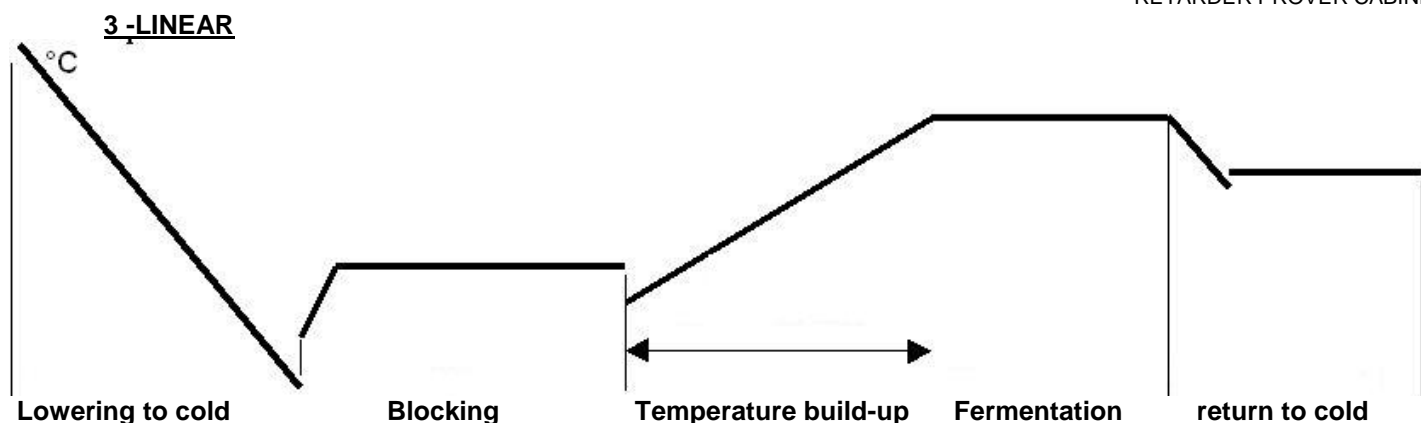


Example of programming with 4 phases (out of 5 possibilities)

The operation in stepped mode allows for fermentation in several steps, with a maximum of five.

For example: blocking temperature 4°C :

- first phase : set point 8°C for 30 min,
- second phase : set point 12°C for 45 min,
- third phase: set point 15°C for 120 min
- fourth phase : set point 20°C for 60 min,
- fifth phase : set point 0°C for 0 min.



This mode is provided to control the temperature build-up time. For example, if you program a blocking temperature of 4°C, a fermentation temperature of 24°C and a temperature build-up time of 200 minutes, the set point will evolve by 1°C every 10 min.

The temperature build-up time cannot under any circumstance be less than the STANDARD temperature build-up time described above.

In this example, the temperature build-up time is programmed for a controlled time.

4.1.4 Pre-programming

This pre-programming is performed when the machine is started up or later on. It is not necessary if you wish to work in DIRECT only. This pre-programming is performed in two phases :

1- allocation of a name and type of fermentation for each program for example :

-P1 : baguette, linear

-P2 wholemeal bread, stepped, etc....

2- setting of each program according to the type of fermentation chosen.

On first-time start-up of the unit the following message appears :

COMPLETE STOP

This message means that the unit is on and ready to operate.

To do this, activate the key:



The readout comes on and indicates :

17/06/02 14H37
DIRECT

press the following key several times



until the following appears :

Nom et type de
fermentation

Then press :



The readout displays

P1 -----
standard Ferment

This display will enable you to allocate to program 1 (P1) :

-a name which will be the name of the product produced from this program. For example « baguette » or « wholemeal ». You have 8 digits for this.

-a type of fermentation : standard, linear or stepped.

-Allocation of the name and type of fermentation to program P1

The readout displays

P1 -----
standard Ferment

Press :



The first digit flashes. This first digit will become the first letter (or the first figure) of the name of the program. To allocate this first letter,

You must use the following keys :



AND



When the first letter is selected,

save using the following key,

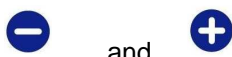


At this point, the second digit flashes. Proceed in the same way for the eight digits. The following characters are available :

-all the letters
the ten figures
space.

When the eight digits have been allocated, the type of fermentation flashes, for example « standard. To modify the type of fermentation,

You must use the following keys :



and

When the correct type of fermentation has been selected (standard, linear or stepped),

save using the following key,



The readout goes back to

| |
|-------------------------------|
| Name and type of fermentation |
|-------------------------------|

To allocate a name and type of fermentation to program 2,

Use



The controller is ready for the allocation of a name and type of fermentation to the second program performed in the same way as for P1.

Using :



Go on the screen to

| | |
|------------------|-------|
| P2 | ----- |
| standard Ferment | |

When you have allocated a name and type of fermentation to the four programs, the readout goes back to

| |
|-------------------------------|
| Name and type of fermentation |
|-------------------------------|

The controller is ready for the setting of the programs.

-Setting the programs

You must first of all point to program 1

To do this use the following keys :



and

Until the readout indicates :

| |
|-----------|
| Prog1 |
| Baguette* |

*example of name allocated to this program

Go into this program using :



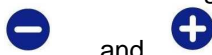
The readout then proposes :

| | |
|--------|---------|
| P1 end | |
| 00h00 | Tuesday |

If nothing has changed, the fermentation cycle will finish on Tuesday at 00h00.

The first two digits of the time flash. If the time has to be changed,

you must use the following keys :



and

then confirm using :



Proceed in the same way for all the settings. These settings are listed according to the type of fermentation chosen.

-Starting pre-programmed programs

When the program has been set as previously indicated, it has to be started.

to do this, press :



modify the values if required, confirm the new values using :



then the cycle can be started up at any time ,

using the following key :



the readout becomes :

| |
|--------------------|
| Baguette 05h15 Mar |
| Accumulat. -01°C |

In this example, the baguette cycle has been started and will be finished on Tuesday at 5h15. The cycle is in the accumulation phase, the set point is -1°C. The second line will evolve as and when the cycle progresses.

The cycle can be stopped at any time if desired,

using the following key :



-End of fermentation cycle

When the fermentation cycle is over and before the return to cold, a sound signal indicates the end of the cycle. This sound signal lasts approximately 1 min and the readout flashes throughout this signal.

The cycle can be stopped using



If the cycle is not stopped as specified above, the regulation will be automatically positioned on the return to cold.

-Lowering to cold, accumulation

In order to facilitate the lowering to cold of products, it is important to insert them into a chamber which is already cold. This is the aim of the first phase of the cycle.

This phase lasts 30 min. It is therefore necessary to start the fermentation cycle approximately 30 minutes prior to inserting the products into the chamber.

4.1.5 Controller readout logic

| | | |
|----------------------|-------------------------------|---|
| COMPLETE STOP | DIRECT | Temperature |
| | | Hygrometry |
| | Program 1 | As per type of fermentation selected* Standard, linear or stepped (See next page) |
| | Program 2 | As per type of fermentation selected * Standard, linear ou stepped |
| | Program 3 | As per type of fermentation selected * Standard, linear or stepped |
| | Program 4 | As per type of fermentation selected * Standard, linear or stepped |
| | Name and type of ferm. | Name Prog 1 |
| | | Fermentation Standard Linear Stepped |
| | | Name Prog 2 |
| | | Fermentation Standard Linar Stepped |
| | | Name Prog 3 |
| | | Fermentation Standard Linear Stepped |
| | | Name Prog 4 |
| | | Fermentation Standard Linear Stepped |
| | Clock programming | Year Month Day Hour Minutes |

4.1.6 Type of fermentation

STANDARD

| | |
|-----------------|--------------------------------------|
| <u>Program1</u> | Time of end of cycle of fermentation |
| I | Day of end of cycle of fermentation |
| I | Accumulation Temp |
| I | Blocking Temp |
| I | Fermentation Time |
| I | Fermentation temperature |
| I | Fermentation hygrometry |
| I | Return to cold temperature |
| I | Return to cold hygrometry |

STEPPED

| | |
|-----------------|--------------------------------------|
| <u>Program1</u> | Time of end of cycle of fermentation |
| I | Day of end of cycle of fermentation |
| I | Accumulation Temp |
| I | Blocking Temp |
| I | Fermentation Time phase 1 |
| I | Fermentation temperature phase 1 |
| I | Fermentation hygrometry phase 1 |
| I | Fermentation Time phase 2 |
| I | Fermentation temperature phase 2 |
| I | Fermentation hygrometry phase 2 |
| I | Fermentation Time phase 3 |
| I | Fermentation temperature phase 3 |
| I | Fermentation hygrometry phase 3 |
| I | Fermentation Time phase 4 |
| I | Fermentation temperature phase 4 |
| I | Fermentation hygrometry phase 4 |
| I | Fermentation Time phase 5 |
| I | Fermentation temperature phase 5 |
| I | Fermentation hygrometry phase 5 |
| I | Return to cold temperature |
| I | Return to cold hygrometry |

LINEAR

| | |
|-----------------|--------------------------------------|
| <u>Program1</u> | Time of end of cycle of fermentation |
| I | Day of end of cycle of fermentation |
| I | Accumulation Temp. |
| I | Blocking Temp. |
| I | Fermentation time |
| I | Fermentation temperature |
| I | Fermentation hygrometry |
| I | Temperature build-up time |
| I | Return to cold temperature |
| I | Return to cold hygrometry |

4.1.7 Alarms / faults

The controller signals the problems linked to an operating fault :

- compressor thermal fault,
- high pressure fault,
- heating element klaxon fault,
- open door fault for machines fitted accordingly (option).

The signalling is performed as follows :

- alarm LED flashing,
- intermittent sound signal,
- signalling of fault on readout alternating with the normal readout.

For high pressure and heating element klaxon faults, the disappearance of the fault gives rise to the disappearance of the alarm. **However, it is of prime importance to provide for quick intervention from a technician.**

Three alarms of one of these faults in a day gives rise to the stopping of the regulation and the machine can no longer operate.

The compressor thermal fault disappears after manual resetting of the klaxon.

The door contact fault disappears after closing of the door.

4.1.8 Power cut

In the event of a power cut greater than one minute and after the end of the power cut, the machine goes back into operation. This power cut is then indicated by an intermittent readout with the normal readout. To go back to the normal readout

Press :



After a power cut the cycle is resumed automatically ignoring this cut-out. I.e. for instance, the cycle should have stopped at 5h00 and a power cut occurred between 3h00 and 3h15, it will finish despite this at 5h00.

If the power cut is long, this can obviously have consequences on the fermentation quality.

4.1.9 Remote signalling

The faults can be remote signalled :

- by fitting a lamp or bell at the output provided for this purpose on the electronic board. This lamp or bell would operate intermittently.
- by using the communication accessory which signals a fault on a fixed or mobile telephone. In this case, two vocal messages signal one of the two type of problems ascertained :
 - either operating fault (one of the faults signalled above)
 - or a power cut.

4.2 Advises of use

The controlled fermentation chamber that you have just acquired is designed to differ the growth from the products of panification. The controlled growth requires the use of **raw materials particular and good quality**

And in certain case an adaptation of your receipt of manufacture is necessary. Because the pastes react differently when they are cooled.

Work in 48 hours being more difficult it is advised to validate manufacture over 24 hours well.

We recommend in order to obtain optimum conditions of blocking and fermentation, to maintain the paste at its exit of the kneader at a temperature of 22°C the openings of do or must limited to the maximum, because they cause a change of the temperature and ambient hygrometry which can be harmful for the products.



Use the machine only for what it was conceived not to try to overload it or to place unsuited products there

5 Servicing and maintenance of the machine

5.1 Servicing of the machine

The materials used for the construction of our machines, in particular the interior stainless partitions authorize a frequent cleaning, without risk of deterioration of surfaces.

- Procedure:

The interior cleaning of the machine perhaps produced with clear **water added with products cleaning compatible with stainless and aluminium in particular**. Surfaces will be then rinsed with clear water.

The outside of the machine is carried out with painted coated sheet panels. It is thus advisable to use products compatible with this coating.

The use of a pump high-pressure is proscribed. It is recommended to use a brush or a sponge and to possibly rinse with a **jet low pressure**.

Not to use abrasive liquids or iron spangles which would be likely to stripe materials.



The detergents, scouring powder, abrasives, thinners and **all the products containing of chlorine are prohibited**

- Frequency:

The ground must be cleaned after each use.

It is recommended to clean the interior walls at least every week, except if the local standards impose a more frequent cleaning.

- Maintenance of the device of hygrometry:

In order to guarantee a good performance of the device of hygrometry, it is recommended to regularly clean the water vat and the piping of too full connecting to the sewer. The frequency of cleaning depends on the quality of the water of each installation.



After each cleaning and each use, the machine will have to be ventilated by leaving the open door so that moisture can be evacuated

5.2 Maintenance of the machine

- Every 6 months:

- to guarantee a correct operation with an optimum guarantee of result, it is recommended to carry out **every six months** the following operations:

- Checking and cleaning so necessary of the tube of water diffusion and cleaning of the water filter .
- Checking of the cleanliness of the evaporator cleaning to clear water if necessary.
- Cleaning of the condensate vat, piping and syphon to clear water
- Cleaning of the condenser of the refrigerating unit using a light brush and of a air blast if possible.

Check that no foreign body obstructs the operation of the ventilator.

- Every year:

- In order to avoid a premature ageing of the machine and to put itself in conformity with safety and the environmental protection requirements, should be carried out **every year** the following operations:

- Checking of the load by cooling refrigerating circuit and to check the absence of escapes.
- Control absence of moisture in the refrigerating circuit (liquid indicator).
- Checking of the state of the electric cables.
- Control tightening of the screws of connected electric.
- Control masses.

The list of the operations of described cleaning and maintenance is not exhaustive, it will be possibly supplemented by the requirements of the local standards related to the environment, hygiene and safety.



The operations of cleaning or maintenance must **be carried out by qualified personnel**.
The machine should not be under tension (power dump) for any operation of cleaning or maintenance

5.3 Malfunctions and assistance to maintenance

| Noted breakdown | Probable cause | Checking | Remedy |
|--|---|---|--|
| No electric body functions. | No power supply. | Test the feeding circuit to the voltmeter. | |
| | Defective general fuses. | | Replace after having checked their gauge. |
| The machine does not make any more cold | Lack of fluids | Detection of the escapes | Supplement the freon load |
| | Go prolonged in cold | | defrosting while passing by again in heat |
| | blocked Condenser | | Clean the condenser |
| The machine does not make any more heat | roasted Resistance | | Change resistance |
| | Ventilator Except service | | Change the ventilator |
| The temperature is higher than the point of instruction but the group does not function. | The electromagnetic valve is not supplied. | Check the contact of the regulator (check the parameters). | In the event of not-closing, to change the module. |
| | The electromagnetic valve is supplied. | Check the pressure of the circuit LP. | Control the operation of the pressure controller LP |
| The compressor does not function and the indicator of defect is enlightened. | Open magneto-thermal circuit breaker. | Check if the magneto-thermal circuit breaker is indeed open. | Close the circuit breaker after having checked and possibly regulated the value of calibration. |
| The compressor does not function. | Reel of the contactor not fed. | Test the control circuit. | Regulate or change the accused body. |
| The ventilator does not turn. | Terminals of ventilation not fed. | Control wiring while referring to the electric diagram. | |
| | Bad parameters technicians of the regulator. | Check the parameters technicians of the regulator. | Program the parameter <i>Tarrêt ventilation</i> correctly. |
| | Propeller blocked mechanically. | | Remove the obstacle or to change the propeller. |
| An indicator lamp does not ignite. | Defect of the keyboard, the chart of posting or the BUS cable. | Test the keyboard with a new RJ45 BUS cable. | Change the accused body. |
| Tube flow of water evaporator filled. | Obturation by foreign bodies. | | Clean including the siphon. |
| | Catch in ice. | Control the operation of the resistance of flow | Test the corresponding circuit. Change the latter if it is defective |
| Presence of bubbles in the liquid indicator. | Liquid circuit partially stopped between the tank and the liquid indicator. | Control the bodies placed on the circuit. | Replace the defective bodies. |
| | Lack refrigerating liquid. | Seek the escape. | Repair the escape. Make the complement of load. |
| No circulation with the liquid indicator | Circuit is stopped. | Control that all the bodies placed on the circuit are opened and not stopped. | Open, emerge them or replace them. |
| | Completely emptied installation of cooling fluid. | Seek the escape | Repair the escape or to change the defective part. Change the dehydrator. Make the complete vacuum of the installation. Remake the load as Freon |

| | | | |
|--|---|---|--|
| Evaporator insufficiently filled or overheats too significant. | Presence of bubbles to the liquid indicator. | See above. | |
| | Badly adjusted of pressure reducer. | | Carry out the adjustment by decreasing overheating. |
| | Partially stopped expansion valve. | | Clean expansion valve |
| Abnormal heating with the condenser. | Circulation of air partially blocked. | Ensure itself of freedom of movement of the air around the condense | Clean the condenser. |
| | Presence of incondensable in the refrigerating circuit. | Check the escapes. | Remove the refrigerating load of the circuit. Change the deshydrator. Make the vacuum of the installation and to reload. |
| Condensation around the doors. | The doors heaters do not heat | Check the food of those. Control the good continuity of each cord. | |
| The products crust | Bad moisture | Check the operation of the system of hygrometry | Increase the instruction of moisture |
| | Bad petrissage | | Hold of the soft and fresh pastes |
| The products blisters | Bad blocking of the paste | | Hold of the fresh pastes Decrease the temperature of blocking |
| The products sticks | Too soft pastes | | Hold of the stiffer pastes |
| | Excess of moisture | | Reduce the instruction of hygrometry |

6 Access to the various spare parts

6.1 Element to the evaporator

To reach the evaporator, it is necessary to proceed in the following way:

- Put the machine not under tension.
- Dismount sheet of separation of air.
- Disconnect the refrigerating tubes after having stored the refrigerant in the liquid bottle.
- Raise the evaporator to release it from the notches in which it is positioned

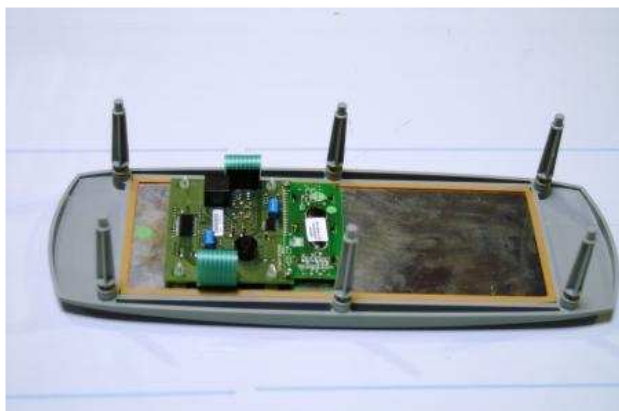


For the realization of this operation, it is imperative to wear gloves to avoid being wounded the fingers on the wings.

6.2 Element to the keyboard

To reach the keyboard the unit should first of all be disunited frame flexible and control cluster of the door. Move to completely leave it its housing

Then it is necessary to give off the plastic souple.Then framework completely, it is necessary to disconnect the two limandas from connection of the frontage with the keyboard.



Disunite card it frontage.



CAUTION the communication cable between two cards should not be disconnected or reconnected when the machine is under tension.

6.3 Replacement of the probe of hygrometry

In the event of defect of probe of hygrometry, it is possible for you to temporarily maintain the machine under operation by replacing the electronic probe by a mechanical hygrostat and by changing the computer code (pass the computer code to 41 in the technician parameters. **Attention**, the general operation of the machine will be different on the level from internal ventilation.)



During the reinstallation of the electronic probe, check wiring.



No the hygrometry on size 46.

7 Additional information

7.1 Declaration CE of conformity

Us, **HENGEL INDUSTRIE S.A.**

ZA Les Berges du Rhins - **42120 PARIGNY - FRANCE**

Let us declare under our exclusive responsibility that the product:

Retarder Prover Cabinet

Which this declaration is referred are in conformity with the following standards:

| | | |
|-----------------------|-------------|--|
| NF IN 292-1: | 1991 | basic Concepts, principles general of design |
| NF IN 292-2: | 1991 | basic Concepts, principles general of design, principles and specifications technical Part 1 |
| NF IN 292-À/1: | 1995 | basic Concepts, principles general of design, principles and specifications technical Part 2 |
| NF IN 60204-1: | 1998 | Component electric on the machines |

PARIGNY LE 13/01/1999

HENGEL INDUSTRIE S.A.

7.2 Co-ordinates of your fitter

The quality of machines HENGEL and their installation by professional will ensure you a reliable operation during many years.

Nevertheless, your machine is not safe from unspecified disfonctionnement or shock with carriages or grilles. In case of problem, or for a preventive maintenance, you can contact the following professional:

Plug of the professional:



Handwritten co-ordinates of the professional:

Hengel, Performance at any Degrees
ZA Les Berges du Rhins - 42120 PARIGNY - France
Tel: +33 4 77 23 40 00 - Fax: +33 4 77 23 40 09
e-mail : infos@hengel.com
Website : www.hengel.com